

Attorney Docket No.884.A56US1

SCHWEGMAN ■ LUNDBERG ■ WOESSNER ■ KLUTH

United States Patent Application
COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: **SYSTEMS AND METHODS FOR ADAPTIVE BIT LOADING IN A MULTIPLE ANTENNA ORTHOGONAL FREQUENCY DIVISION MULTIPLEXED COMMUNICATION SYSTEM.**

The specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. § 1.56 (attached hereto). I also acknowledge my duty to disclose all information known to be material to patentability which became available between a filing date of a prior application and the national or PCT international filing date in the event this is a Continuation-In-Part application in accordance with 37 C.F.R. § 1.63(e).

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 120 or 365(c) of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

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Page 2 of 4

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Aldous, Alan	Reg. No. 31,905	Greenwald, Bradley A.	Reg. No. 34,341	Perdok, Monique M.	Reg. No. 42,989
Anderson, Robert D.	Reg. No. 33,826	Harris, Robert J.	Reg. No. 37,346	Peret, Andrew R.	Reg. No. 41,246
Anglin, J. Michael	Reg. No. 24,916	Huter, Jeffrey B.	Reg. No. 41,086	Peterson, David C.	Reg. No. 47,857
Arora, Suneel	Reg. No. 42,267	Jackson Huebsch, Katharine A.	Reg. No. 47,670	Plimier, Michael D.	Reg. No. 43,004
Bacon, Shireen	Reg. No. 40,494	Jurkovich, Patti J.	Reg. No. 44,813	Proksch, Michael A.	Reg. No. 43,021
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Bianchi, Timothy E.	Reg. No. 39,610	Kalson, Seth	Reg. No. 40,670	Reif, Kevin A.	Reg. No. 36,381
Billion, Richard E.	Reg. No. 32,836	Klima-Silberg, Catherine I.	Reg. No. 40,052	Sayles, Crystal D.	Reg. No. 44,318
Black, David W.	Reg. No. 42,331	Kluth, Daniel J.	Reg. No. 32,146	Schumm, Sherry W.	Reg. No. 39,422
Brake, Edward	Reg. No. 37,784	Lacy, Rodney L.	Reg. No. 41,136	Schwegman, Micheal L.	Reg. No. 25,816
Brennan, Thomas F.	Reg. No. 35,075	Lam, Peter	Reg. No. 44,855	Seddon, Ken	Reg. No. 43,105
Burge, Ben	Reg. No. 42,372	Lin, Issac	Reg. No. 50,672	Seeley, Mark	Reg. No. 32,299
Chadwick, Robin A.	Reg. No. 36,477	Lundberg, Steven W.	Reg. No. 30,568	Shah, Ami P.	Reg. No. 42,143
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Choi, Glen	Reg. No. 43,546	Maki, Peter C.	Reg. No. 42,832	Skabrat, Steve	Reg. No. 36,279
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Dahl, John M.	Reg. No. 44,639	Mehrle, Joseph P.	Reg. No. 45,535	Tong, Viet V.	Reg. No. 45,416
DeLizio, Andrew	Reg. No. 52,806	Mennemeier, Larry	Reg. No. 51,003	Tran, David	Reg. No. 50,804
Draeger, Jeffrey S.	Reg. No. 41,000	Muller, Mark V.	Reg. No. 37,509	Viksnins, Ann S.	Reg. No. 37,748
Drake, Eduardo E.	Reg. No. 40,594	Nagy, Paul	Reg. No. 37,896	Wells, Calvin	Reg. No. 43,256
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Forrest, Bradley A.	Reg. No. 30,837	Nicholls, Dennis A.	Reg. No. 42,036	Woessner, Warren D.	Reg. No. 30,440
Gagne, Christopher	Reg. No. 36,142	Nielsen, Walter W.	Reg. No. 25,539	Wong, Sharon	Reg. No. 37,760
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Green, Sharmini N.	Reg. No. 41,410	Parker, J. K.	Reg. No. 33,024		
Greenberg, Robert A.	Reg. No. 44,133	Peacock, Gregg A.	Reg. No. 45,001		

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary. Please direct all correspondence in this case to Schwegman, Lundberg, Woessner & Kluth, P.A. at the address indicated below:
 P.O. Box 2938, Minneapolis, MN 55402
 Telephone No. (612)373-6900

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of joint inventor number 1 : John S. Sadowsky

Citizenship: United States of America

Residence: Mesa, AZ

Post Office Address: 1428 West Lindner

Mesa, AZ 85202

Signature: _____

John S. Sadowsky

Date: _____

12/15/03

X Additional inventors are being named on separately numbered sheets, attached hereto.

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Full Name of joint inventor number 2 : Minnie H
Citizenship: United States of America Residence: Los Altos, CA
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Signature: _____ Date: _____
Minnie Ho

Full Name of joint inventor number 3 : Sumeet Sandhu
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Signature: _____ Date: _____
Sumeet Sandhu

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Russian Federation

Signature: _____ Date: _____
Alexander A. Maltsev

Full Name of joint inventor number 5 : Eric A. Jacobsen
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Scottsdale, AZ 85259

Signature: _____ Date: _____
Eric A. Jacobsen

Full Name of joint inventor number 6 : Ali S Sadri
Citizenship: United States of America Residence: San Diego, CA
Post Office Address: 11835 Carmel Mountain Road
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San Diego, CA 92128

Signature: _____ Date: _____
Ali S Sadri

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§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

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 Citizenship: United States of America Residence: Mesa, AZ
 Post Office Address: 1428 West Lindner
Mesa, AZ 85202

Signature: John S. Sadowsky Date: _____

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Full Name of joint inventor number 2 : Minnie Ho
Citizenship: United States of America Residence: Los Altos, CA
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Signature: Minnie Ho Date: Dec. 23, 2003
Minnie Ho

Full Name of joint inventor number 3 : Sumeet Sandhu
Citizenship: United States of America Residence: San Jose, CA
Post Office Address: 25 Rio Robles East
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Sumeet Sandhu

Full Name of joint inventor number 4 : Alexander A. Maltsev
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Russian Federation

Signature: _____ Date: _____
Alexander A. Maltsev

Full Name of joint inventor number 5 : Eric A. Jacobsen
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Signature: _____ Date: _____
Eric A. Jacobsen

Full Name of joint inventor number 6 : Ali S Sadri
Citizenship: United States of America Residence: San Diego, CA
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San Diego, CA 92128

Signature: _____ Date: _____
Ali S Sadri

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Beekman, Marvin L.	Reg. No. 38,377	Kalis, Janal M.	Reg. No. 37,650	Prout, William F.	Reg. No. 33,995
Bianchi, Timothy E.	Reg. No. 39,610	Kalson, Seth	Reg. No. 40,670	Reif, Kevin A.	Reg. No. 36,381
Bilkon, Richard E.	Reg. No. 32,836	Klima-Silberg, Catherine I.	Reg. No. 40,052	Sayles, Crystal D.	Reg. No. 44,318
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Brake, Edward	Reg. No. 37,784	Lacy, Rodney L.	Reg. No. 41,136	Schwegman, Michael L.	Reg. No. 25,816
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Forrest, Bradley A.	Reg. No. 30,837	Nicholls, Dennis A.	Reg. No. 42,036	Woessner, Warren D.	Reg. No. 30,440
Gagne, Christopher	Reg. No. 36,142	Nielsen, Walter W.	Reg. No. 25,539	Wong, Sharon	Reg. No. 37,760
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Greaves, John N.	Reg. No. 40,362	Parker, Lanny	Reg. No. 44,281	Young, Charles K.	Reg. No. 39,435
Green, Sharnini N.	Reg. No. 41,410	Parker, J. K.	Reg. No. 33,024		
Greenberg, Robert A.	Reg. No. 44,133	Peacock, Gregg A.	Reg. No. 45,001		

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary. Please direct all correspondence in this case to Schwegman, Lundberg, Woessner & Kluth, P.A. at the address indicated below:
P.O. Box 2938, Minneapolis, MN 55402
Telephone No. (612)373-6900

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of joint inventor number 1 : John S. Sadowsky
Citizenship: United States of America Residence: Mesa, AZ
Post Office Address: 1428 West Lindner
Mesa, AZ 85202

Signature: John S. Sadowsky Date: _____

☒ Additional inventors are being named on separately numbered sheets, attached hereto.

BEST AVAILABLE COPY

Full Name of joint inventor number 2 : Minnie Ho
Citizenship: United States of America Residence: Los Alt s, CA
Post Office Address: 405 Becker Lane
Los Altos, CA 94022

Signature: _____ Date: _____
Minnie Ho

Full Name of joint inventor number 3 : Sumeet Sandhu
Citizenship: United States of America Residence: San Jose, CA
Post Office Address: 25 Rio Robles East
#408
San Jose, CA 95134

Signature: *Sumeet Sandhu* Date: 12/15/03
Sumeet Sandhu

Full Name of joint inventor number 4 : Alexander A. Maltsev
Citizenship: Russian Federation Residence: Nizhny Novgorod Russian Federation
Post Office Address: Verhne-Pecherskaya Str., 1-7
Nizhny Novgorod 603163
Russian Federation

Signature: _____ Date: _____
Alexander A. Maltsev

Full Name of joint inventor number 5 : Eric A. Jacobsen
Citizenship: United States of America Residence: Scottsdale, AZ
Post Office Address: 10539 E. Salt Bush Drive
Scottsdale, AZ 85259

Signature: _____ Date: _____
Eric A. Jacobsen

Full Name of joint inventor number 6 : Ali S Sadri
Citizenship: United States of America Residence: San Diego, CA
Post Office Address: 11835 Carmel Mountain Road
Suite 1304-306
San Diego, CA 92128

Signature: _____ Date: _____
Ali S Sadri

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§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

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Attorney Docket No.884.A56US1

SCHWEGMAN ■ LUNDBERG ■ WOESSNER ■ KLUTH

United States Patent Application**COMBINED DECLARATION AND POWER OF ATTORNEY**

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: **SYSTEMS AND METHODS FOR ADAPTIVE BIT LOADING IN A MULTIPLE ANTENNA ORTHOGONAL FREQUENCY DIVISION MULTIPLEXED COMMUNICATION SYSTEM.**

The specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. § 1.56 (attached hereto). I also acknowledge my duty to disclose all information known to be material to patentability which became available between a filing date of a prior application and the national or PCT international filing date in the event this is a Continuation-In-Part application in accordance with 37 C.F.R. § 1.63(e).

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 120 or 365(c) of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

No such claim for priority is being made at this time.

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Attorney Docket No.: 884.A56US1
 Serial No. not assigned
 Filing Date: not assigned

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Aldous, Alan	Reg. No. 31,905	Greenwald, Bradley A.	Reg. No. 34,341	Perdok, Monique M.	Reg. No. 42,989
Anderson, Robert D.	Reg. No. 33,826	Harris, Robert J.	Reg. No. 37,346	Pcret, Andrew R.	Reg. No. 41,246
Anglin, J. Michael	Reg. No. 24,916	Huter, Jeffrey B.	Reg. No. 41,086	Peterson, David C.	Reg. No. 47,857
Arora, Suneel	Reg. No. 42,267	Jackson Huebsch, Katharine A.	Reg. No. 47,670	Plimier, Michael D.	Reg. No. 43,004
Bacon, Shireen	Reg. No. 40,494	Jurkovich, Patti J.	Reg. No. 44,813	Proksch, Michael A.	Reg. No. 43,021
Beekman, Marvin L.	Reg. No. 38,377	Kalia, Janal M.	Reg. No. 37,650	Prout, William F.	Reg. No. 33,995
Bianchi, Timothy E.	Reg. No. 39,610	Kalsen, Seth	Reg. No. 40,670	Reif, Kevin A.	Reg. No. 36,381
Billion, Richard E.	Reg. No. 32,836	Klima-Silberg, Catherine L.	Reg. No. 40,052	Sayles, Crystal D.	Reg. No. 44,318
Black, David W.	Reg. No. 42,331	Kluth, Daniel J.	Reg. No. 32,146	Schumm, Sherry W.	Reg. No. 39,422
Brake, Edward	Reg. No. 37,784	Lacy, Rodney L.	Reg. No. 41,136	Schwegman, Micheal L.	Reg. No. 25,816
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Chadwick, Robin A.	Reg. No. 36,477	Lundberg, Steven W.	Reg. No. 30,568	Shah, Ami P.	Reg. No. 42,143
Chen, George	Reg. No. 50,807	Lundmark, David C.	Reg. No. 42,815	Simon, David	Reg. No. 32,756
Choi, Glen	Reg. No. 43,546	Maki, Peter C.	Reg. No. 42,832	Skabrat, Steve	Reg. No. 36,279
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Cool, Kenneth J.	Reg. No. 40,570	McCrackin, Ann M.	Reg. No. 42,858	Stutman-Horn, Joni D.	Reg. No. 42,173
Dahl, John M.	Reg. No. 44,639	Mehrle, Joseph P.	Reg. No. 45,535	Tong, Viet V.	Reg. No. 45,416
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Draeger, Jeffrey S.	Reg. No. 41,000	Muller, Mark V.	Reg. No. 37,509	Viksmis, Ann S.	Reg. No. 37,748
Drake, Eduardo E.	Reg. No. 40,594	Nagy, Paul	Reg. No. 37,896	Wells, Calvin	Reg. No. 43,256
Embreton, Janet E.	Reg. No. 39,665	Nama, Prakash	Reg. No. 44,255	Willardson, Michael	Reg. No. 50,856
Faatz, Cindy	Reg. No. 39,973	Nelson, A. James	Reg. No. 28,650	Winkle, Robert G.	Reg. No. 37,474
Forrest, Bradley A.	Reg. No. 30,837	Nicholls, Dennis A.	Reg. No. 42,036	Woessner, Warren D.	Reg. No. 30,440
Gagne, Christopher	Reg. No. 36,142	Nielsen, Walter W.	Reg. No. 25,539	Wong, Sharon	Reg. No. 37,760
Gorric, Gregory J.	Reg. No. 36,530	Padys, Danny J.	Reg. No. 35,635	Yates, Steven D.	Reg. No. 42,242
Greaves, John N.	Reg. No. 40,362	Parker, Lanny	Reg. No. 44,281	Young, Charles K.	Reg. No. 39,435
Green, Sharmini N.	Reg. No. 41,410	Parker, J. K.	Reg. No. 33,024		
Greenberg, Robert A.	Reg. No. 44,133	Peacock, Gregg A.	Reg. No. 45,001		

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary. Please direct all correspondence in this case to Schwegman, Lundberg, Woessner & Kluth, P.A. at the address indicated below:
 P.O. Box 2938, Minneapolis, MN 55402
 Telephone No. (612)373-6900

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of joint inventor number 1: **John S. Sadowsky**
 Citizenship: **United States of America**
 Post Office Address: **1428 West Lindner**
Mesa, AZ 85202

Residence: **Mesa, AZ**

Signature: _____
John S. Sadowsky

Date: _____

Attorney Docket No.: 884.A56U81

Page 3 of 4

Serial No. not assigned

Filing Date: not assigned

Full Name of joint inventor number 2 : Minnie Ho
Citizenship: United States of America Residence: Los Altos, CA
Post Office Address: 405 Becker Lane
Los Altos, CA 94022

Signature: _____ Date: _____
Minnie Ho

Full Name of joint inventor number 3 : Sumeet Sandhu
Citizenship: United States of America Residence: San Jose, CA
Post Office Address: 25 Rio Robles East
#408
San Jose, CA 95134

Signature: _____ Date: _____
Sumeet Sandhu

Full Name of joint inventor number 4 : Alexander A. Maltsev
Citizenship: Russian Federation Residence: Nizhny Novgorod Russian Federation
Post Office Address: Verhne-Pecherskaya Str., 1-7
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Russian Federation

Signature: _____ Date: 17 December, 2003
Alexander A. Maltsev

Full Name of joint inventor number 5 : Eric A. Jacobsen
Citizenship: United States of America Residence: Scottsdale, AZ
Post Office Address: 10539 E. Salt Bush Drive
Scottsdale, AZ 85259

Signature: _____ Date: _____
Eric A. Jacobsen

Full Name of joint inventor number 6 : Ali S Sadri
Citizenship: United States of America Residence: San Diego, CA
Post Office Address: 11835 Carmel Mountain Road
Suite 1304-306
San Diego, CA 92128

Signature: _____ Date: _____
Ali S Sadri

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Attorney Docket No.: 884.A56US1
Serial No. not assigned
Filing Date: not assigned

Page 4 of 4

§ 1.56 Duty to disclose information material to patentability.

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- (2) It refutes, or is inconsistent with, a position the applicant takes in:
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(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

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Attorney Docket No.884.A56US1

SCHWEGMAN ■ LUNDBERG ■ WOESSNER ■ KLUTH

United States Patent Application**COMBINED DECLARATION AND POWER OF ATTORNEY**

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: **SYSTEMS AND METHODS FOR ADAPTIVE BIT LOADING IN A MULTIPLE ANTENNA ORTHOGONAL FREQUENCY DIVISION MULTIPLEXED COMMUNICATION SYSTEM.**

The specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. § 1.56 (attached hereto). I also acknowledge my duty to disclose all information known to be material to patentability which became available between a filing date of a prior application and the national or PCT international filing date in the event this is a Continuation-In-Part application in accordance with 37 C.F.R. § 1.63(e).

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

No such claim for priority is being made at this time.

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Attorney Docket No.: 884.A56US1
 Serial No. not assigned
 Filing Date: not assigned

Page 2 of 4

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Aldous, Alan	Reg. No. 31,905	Greenwald, Bradley A.	Reg. No. 34,341	Perdok, Monique M.	Reg. No. 42,989
Anderson, Robert D.	Reg. No. 33,826	Harris, Robert J.	Reg. No. 37,346	Peret, Andrew R.	Reg. No. 41,246
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Drake, Eduardo E.	Reg. No. 40,594	Nagy, Paul	Reg. No. 37,896	Wells, Calvin	Reg. No. 43,256
Embretson, Janet E.	Reg. No. 39,665	Nama, Prakash	Reg. No. 44,255	Willardson, Michael	Reg. No. 50,856
Faatz, Cindy	Reg. No. 39,973	Nelson, A. James	Reg. No. 28,650	Winkle, Robert G.	Reg. No. 37,474
Forrest, Bradley A.	Reg. No. 30,837	Nicholls, Dennis A.	Reg. No. 42,036	Woessner, Warren D.	Reg. No. 30,440
Gagne, Christopher	Reg. No. 36,142	Nielsen, Walter W.	Reg. No. 25,539	Wong, Sharon	Reg. No. 37,760
Gorrie, Gregory J.	Reg. No. 36,530	Padys, Danny J.	Reg. No. 35,635	Yates, Steven D.	Reg. No. 42,242
Greaves, John N.	Reg. No. 40,362	Parker, Lanny	Reg. No. 44,281	Young, Charles K.	Reg. No. 39,435
Green, Sharmini N.	Reg. No. 41,410	Parker, J. K.	Reg. No. 33,024		
Greenberg, Robert A.	Reg. No. 44,133	Peacock, Gregg A.	Reg. No. 45,001		

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary. Please direct all correspondence in this case to Schwegman, Lundberg, Woessner & Kluth, P.A. at the address indicated below:
P.O. Box 2938, Minneapolis, MN 55402
Telephone No. (612)373-6900

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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 Post Office Address: 1428 West Lindner
Mesa, AZ 85202

Residence: Mesa, AZ

Signature: John S. Sadowsky

Date: _____

☒ Additional inventors are being named on separately numbered sheets, attached hereto. **BEST AVAILABLE COPY**

Attorney Docket No.: 884.A56US1
Serial No. not assigned
Filing Date: not assigned

Page 3 of 4

Full Name of joint inventor number 2 : Minnie Ho
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Minnie Ho

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Sumeet Sandhu

Full Name of joint inventor number 4 : Alexander A. Maltsev
Citizenship: Russian Federation Residence: Nizhny Novgorod Russian Federation
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Alexander A. Maltsev

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Citizenship: United States of America Residence: Scottsdale, AZ
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Scottsdale, AZ 85259

Signature:  _____ Date: December 18, 2003
Eric A. Jacobsen

Full Name of joint inventor number 6 : Ali S Sadri
Citizenship: United States of America Residence: San Diego, CA
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Suite 1304-306
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Ali S Sadri

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Attorney Docket No.: 884.A56US1
Serial No. not assigned
Filing Date: not assigned

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§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

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SCHWEGMAN ■ LUNDBERG ■ WOESSNER ■ KLUTH

United States Patent Application
COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: **SYSTEMS AND METHODS FOR ADAPTIVE BIT LOADING IN A MULTIPLE ANTENNA ORTHOGONAL FREQUENCY DIVISION MULTIPLEXED COMMUNICATION SYSTEM.**

The specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. § 1.56 (attached hereto). I also acknowledge my duty to disclose all information known to be material to patentability which became available between a filing date of a prior application and the national or PCT international filing date in the event this is a Continuation-In-Part application in accordance with 37 C.F.R. § 1.63(e).

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 120 or 365(c) of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

No such claim for priority is being made at this time.

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I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Aldous, Alan	Reg. No. 31,905	Greenwald, Bradley A.	Reg. No. 34,341	Perdok, Monique M.	Reg. No. 42,989
Anderson, Robert D.	Reg. No. 33,826	Harris, Robert J.	Reg. No. 37,346	Peret, Andrew R.	Reg. No. 41,246
Anglin, J. Michael	Reg. No. 24,916	Huter, Jeffrey B.	Reg. No. 41,086	Peterson, David C.	Reg. No. 47,857
Arora, Suneel	Reg. No. 42,267	Jackson Huebsch, Katharine A.	Reg. No. 47,670	Plimier, Michael D.	Reg. No. 43,004
Bacon, Shireen	Reg. No. 40,494	Jurkovich, Patti J.	Reg. No. 44,813	Proksch, Michael A.	Reg. No. 43,021
Beekman, Marvin L.	Reg. No. 38,377	Kalis, Janal M.	Reg. No. 37,650	Prout, William F.	Reg. No. 33,995
Bianchi, Timothy E.	Reg. No. 39,610	Kalsen, Seth	Reg. No. 40,670	Reif, Kevin A.	Reg. No. 36,381
Billion, Richard E.	Reg. No. 32,836	Klima-Silberg, Catherine I.	Reg. No. 40,052	Sayles, Crystal D.	Reg. No. 44,318
Black, David W.	Reg. No. 42,331	Kluth, Daniel J.	Reg. No. 32,146	Schumm, Sherry W.	Reg. No. 39,422
Brake, Edward	Reg. No. 37,784	Lacy, Rodney L.	Reg. No. 41,136	Schwegman, Micheal L.	Reg. No. 25,816
Brennan, Thomas F.	Reg. No. 35,075	Lam, Peter	Reg. No. 44,855	Seddon, Ken	Reg. No. 43,105
Burge, Ben	Reg. No. 42,372	Lin, Issac	Reg. No. 50,672	Seeley, Mark	Reg. No. 32,299
Chadwick, Robin A.	Reg. No. 36,477	Lundberg, Steven W.	Reg. No. 30,568	Shah, Ami P.	Reg. No. 42,143
Chen, George	Reg. No. 50,807	Lundmark, David C.	Reg. No. 42,815	Simon, David	Reg. No. 32,756
Choi, Glen	Reg. No. 43,546	Maki, Peter C.	Reg. No. 42,832	Skabrat, Steve	Reg. No. 36,279
Clark, Barbara J.	Reg. No. 38,107	Malen, Peter L.	Reg. No. 44,894	Speier, Gary J.	Reg. No. 45,458
Clise, Timothy B.	Reg. No. 40,957	Martinez, Anthony	Reg. No. 44,223	Steffey, Charles E.	Reg. No. 25,179
Cochran, David R.	Reg. No. 46,632	Mates, Robert E.	Reg. No. 35,271	Steiner, Paul E.	Reg. No. 41,326
Cool, Kenneth J.	Reg. No. 40,570	McCrackin, Ann M.	Reg. No. 42,858	Stutman-Horn, Joni D.	Reg. No. 42,173
Dahl, John M.	Reg. No. 44,639	Mehrle, Joseph P.	Reg. No. 45,535	Tong, Viet V.	Reg. No. 45,416
DeLizio, Andrew	Reg. No. 52,806	Mennemeier, Larry	Reg. No. 51,003	Tran, David	Reg. No. 50,804
Draeger, Jeffrey S.	Reg. No. 41,000	Muller, Mark V.	Reg. No. 37,509	Viksins, Ann S.	Reg. No. 37,748
Drake, Eduardo E.	Reg. No. 40,594	Nagy, Paul	Reg. No. 37,896	Wells, Calvin	Reg. No. 43,256
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Telephone No. (612)373-6900

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Full Name of joint inventor number 1 : **John S. Sadowsky**
Citizenship: **United States of America** Residence: **Mesa, AZ**
Post Office Address: **1428 West Lindner**
Mesa, AZ 85202

Signature: _____ Date: _____
John S. Sadowsky

☒ Additional inventors are being named on separately numbered sheets, attached hereto.

Full Name of joint inventor number 2 : Minnie Ho
Citizenship: United States of America Residence: Los Altos, CA
Post Office Address: 405 Becker Lane
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Minnie Ho

Full Name of joint inventor number 3 : Sumeet Sandhu
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Post Office Address: 25 Rio Robles East
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San Jose, CA 95134

Signature: _____ Date: _____
Sumeet Sandhu


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Russian Federation

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Alexander A. Maltsev

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Eric A. Jacobsen

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Signature:  _____ Date: 18-12-03
Ali S Sadri

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- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

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